```
XML TYPES IN JAVA
       Title:
       Inventor:
                      David Bau
       Application No.:
                      Not Yet Assigned
                                     Attorney:
                                                    Sheldon R. Meyer
                                     Telephone No.:
       Docket No.:
                      BEAS-01388US1
                                                    (415) 362-3800
       Filing date:
                      Filed Herewith
                                     Express Mail No.: EV 327619127 US
<xsd:schema . . .>
<xsd:element name="purchase-order">
 <xsd:complexType>
 <xsd:element name="line-item" maxOccurs="unbounded">
  <xsd:complexType>
   <xsd:element name="desc" type="xsd:string"/>
   <xsd:element name="itemid" type="xsd:int"/>
   <xsd:element name="price" type="xsd:float"/>
   <xsd:element name="qty" type="xsd:int"/>
  </xsd:complexType>
 </xsd:element>
 </xsd:complexType>
</xsd:element>
</xsd:schema>
```

Drawing Sheet 1 of 9

Figure 1

```
/** @xbean:schema-type element="purchase-order" */
interface PurchaseOrder implements XmlObject
{
  * @xbean:schema-type element="line-item"
 interface LineItem implements XmlObject
   String getDesc();
   void setDesc(String desc);
   int getItemid();
   void setItemid(int itemid);
   float getPrice();
   void setPrice(float price);
   int getQty();
   void setQty(int qty);
 LineItem getLineItem(int index);
 void setLineItem(int index, LineItem lineItem);
 int getLineItemCount();
 void addLineItem(LineItem lineItem);
 void insertLineItem(int index, LineItem lineItem);
 LineItem insertNewLineItem(int index);
 void removeLineItem(int index);
}
```

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Title:

XML TYPES IN JAVA

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Fling date:

David Bau

Not Yet Assigned Attorney: BEAS-01388US1 Telephone Filed Herewith

Telephone No.: Express Mail No.: Sheldon R. Meyer (415) 362-3800 EV 327619127 US

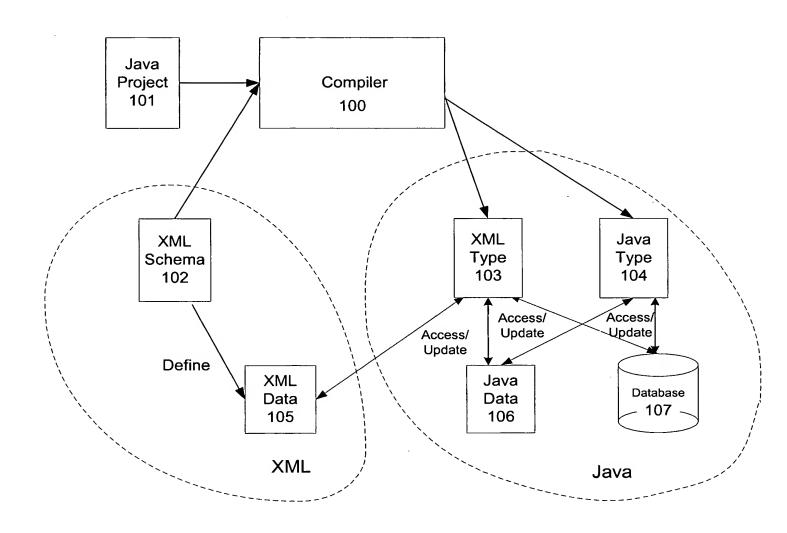


Figure 2

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Application No.: Docket No.: BEAS-01388US1 Filing date: Filed Herewith

Title: Inventor:

> Attorney: Telephone No.:

ţ

Sheldon R. Meyer (415) 362-3800 Express Mail No.: EV 327619127 US

```
@xb:schema
   element::
   <xsd:element name="myData">
     <xsd:sequence>
      <xsd:element name="a" type="xsd:string">
      <xsd:element name="i" type="xsd:int">
     </xsd:seqence>
    </xsd:element>
  @xb:xml-map
   map::
    <myData>
     <a>{a}</a>
     <i>{i}</i>
    </myData>
*/
class MyData implements XBean
  String getA();
  void setA(String a);
  int getI();
  void setl(int i);
}
```

```
1 /** @jws:operation */
2 PurchaseOrder fixQuantities(PurchaseOrder po)
3 {
4
    LineItem[] emptyItems;
    items = (LineItem[])po.getAllValues(".//line-item[qty=0]");
5
6
    for (int i = 0; i < emptyltems.length; i++)
7
      EmptyItems[i].setQty(1);
8
    return po;
9 }
```

Figure 5

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XML TYPES IN JAVA

David Bau

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Express Mail No.:

Attorney: Sheldon R. Meyer Telephone No.: (415) 362-3800 Express Mail No.: EV 327619127 US

```
1 /** @jws:operation */
2 PurchaseOrder fixQuantities(PurchaseOrder po)
3 {
4
    LineItem[] emptyItems;
5
    items = (LineItem[])po.getAllValues(".//line-item[qty=0]");
6
    for (int i = 0; i < emptyItems.length; i++)
      emptyItems[i].set(1);
8
    items = (LineItem[])po.getAllValues(".//line-item");
9
    for (int i = 0; i < emptyltems.length; <math>i++)
10
       int itemid = emptyItems[i].getItemid();
11
12
       emptyltems[i].set(findCatalogItem(emptyltems[i]));
13
    }
14
     return po;
15 }
```

```
<xs:type name="CatalogItem">
  <xs:complexType>
   <xs:sequence>
    <xs:element name="catalogID" type="xs:int"/>
    <xs:element name="description" type="xs:string"/>
    <xs:element name="price" type="xs:float"/>
    </xs:sequence>
    </xs:complexType>
</xs:type>
```

Figure 7

Drawing Sheet 5 of 9 XML TYPES IN JAVA David Bau

Inventor: Application No.: Docket No.: Filing date:

Title:

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Sheldon R. Meyer (415) 362-3800 Express Mail No.: EV 327619127 US

```
<xt:transformation
xmlns:dbtypes="java://dbtypes.mycompany.com/"
 xmlns:po="http://standards.org/po-152"
 xmlns:xsi="... more namespaces ...">
 <xt:input>
  <xt:argument name="input" type="dbtypes:CatalogID"/>
 </xt:input>
 <xt:output type="po:LineItem">
 <xt:xquery><![CDATA[
   <x:value xsi:type="po:LineItem">
    <pi:description>{$input/description}</pi:item-id>
    <pi:itemid>{$input/catalogID}</pi:item-id>
    <pi:price>{$input/price}</pi:item-id>
    <pi:qty>0</pi:qty>
   </x:value>
 ]]></xt:xquery>
</xt:transformation>
```

```
9
    for (int i = 0; i < emptyltems.length; i++)
10 {
      int itemid = emptyItems[i].getItemid();
11
12
      int rememberQty = emptyItems[I].getQty();
13
      emptyItems[i].set(findCatalogItem(emptyItems[i]));
14
      emptyltems[i].setQty(rememberQty);
15 }
```

Figure 9

Drawing Sheet 6 of 9

Title:

XML TYPES IN JAVA

Inventor:

David Bau

Application No.: Not Yet Assigned Attorney: Sheld Docket No.: BEAS-01388US1 Telephone No.: (415) Fling date: Filed Herewith Express Mail No.: EV 32

Sheldon R. Meyer (415) 362-3800 EV 327619127 US

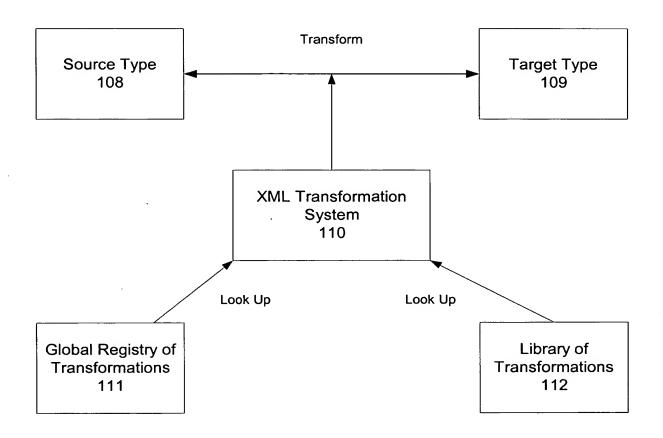


Figure 10

Drawing Sheet 7 of 9 XML TYPES IN JAVA

Title: Inventor:

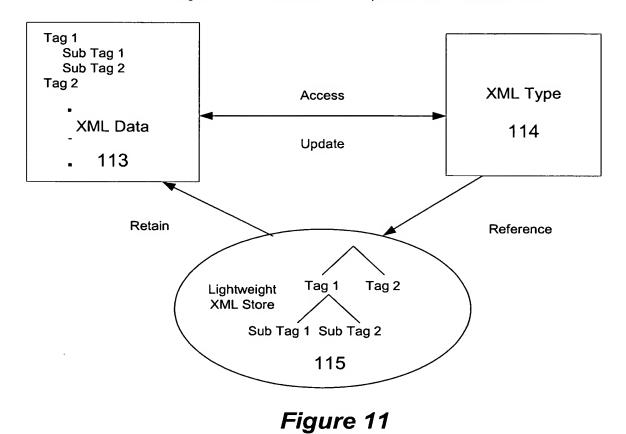
David Bau

Application No.: Docket No.: Fling date:

Not Yet Assigned Attorney: BEAS-01388US1 Filed Herew ith

Telephone No.:

Sheldon R. Meyer (415) 362-3800 Express Mail No.: EV 327619127 US



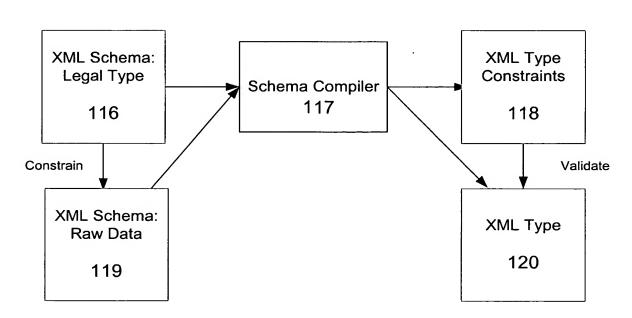


Figure 12

Drawing Sheet 8 of 9

Title:

XML TYPES IN JAVA David Bau

Inventor:

Sheldon R. Meyer (415) 362-3800

Application No.: Not Yet Assigned Attorney: Docket No.: BEAS-01388US1 Telephone No.: Fling date: Filed Herew ith Express Mail No.: EV 327619127 US

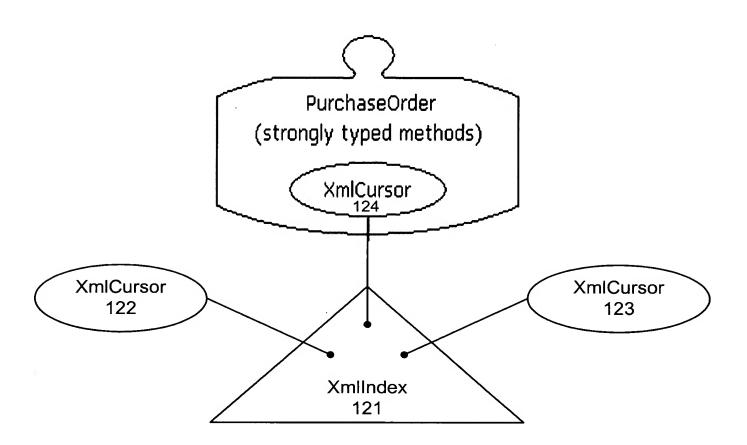
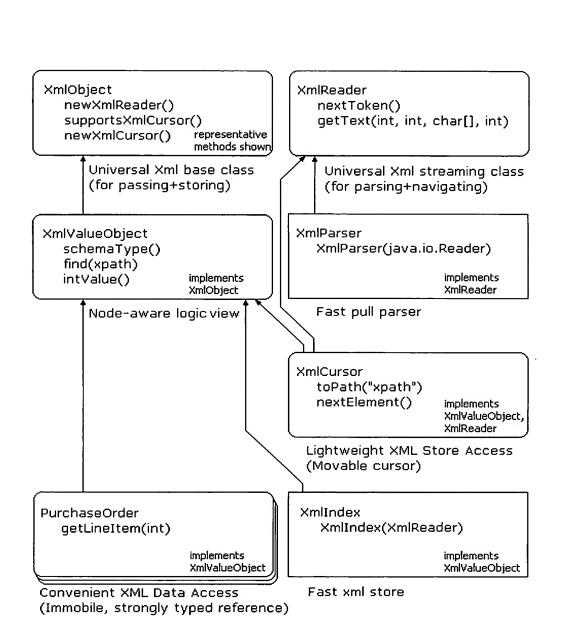


Figure 13



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Attorney:

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Sheldon R. Meyer

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XML TYPES IN JAVA

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Figure 14